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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,736	09/26/2006	Herve Thellier	277409US6PCT	8352

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EXAMINER

SZEWCZYK, CYNTHIA

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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11/17/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/550,736	Applicant(s) THELLIER ET AL.	
	Examiner CYNTHIA SZEWCZYK	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 26 2009 and October 21, 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 13, 14, 16-19, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUSTER et al. (US 5,713,976) in view of MORIN (US 6,138,477).

KUSTER teaches a process for bending glass sheets wherein glass undergoes a prebending step of allowing glass sheets to sag under gravity (col. 3 lines 59-63). It is inherent that if the male former is more curved than the prebent glass sheets, the central region of the glass sheets would contact the glass first. Figure 2 shows that the male former is surrounded by a skirt (17). KUSTER discloses that the glass sheets may be in continuous contact with the glass sheets until being pressed against the male former (col. 4 lines 17-22). KUSTER discloses that a partial vacuum is applied to the male former to further bend the glass sheet (col. 4 lines 13-17 and 23-34). KUSTER

Art Unit: 1791

discloses that the pressing may be discontinued while the partial vacuum is in place (col. 4 lines 14-17). KUSTER discloses that the area between the skirt and the male former also produces a vacuum (see figure 2). KUSTER discloses that a cooling support is brought underneath the glass sheets and transported to a cooling station (col. 4 lines 45-49). KUSTER is silent to raising the female former, the shape of the sag, a separate sag support, and the bending temperature.

MORIN teaches a process and apparatus for the forming of glass plates with complex shapes. MORIN discloses that the method could be used on one or more sheets at a time (col. 3, lines 37-39). MORIN discloses that the glass sheets are first sagged due to gravity (col. 3, lines 35-36) and then the female mold is raised to be brought into contact with the male mold (col. 5, lines 2-4) similar to the process of KUSTER. It would have been obvious that the female former of KUSTER could have been raised towards the male former of KUSTER because MORIN discloses that being able to raise the female former allows for high-speed movements, further sagging and allows for timing control of the process (col. 6 lines 27-51).

Regarding claim 14, MORIN discloses that cylindrical is a simple shape for glass sheets (col. 2, lines 26-29) therefore, it would have been obvious to one of ordinary skill to try cylindrical shapes in the process of KUSTER since KUSTER does not limit the shapes possible for the glass sheets (col. 1 lines 59-62). Additionally, KUSTER describes the molds as concave, which is a cylindrical shape. KUSTER discloses that the prebending molds correspond to the final desired shape (col. 1 lines 60-62)

Regarding claim 16, KUSTER discloses that the glass sheets travel through a tunnel oven to bring about the sagging (col. 3 lines 59-62).

Regarding claim 17, figure 2 of KUSTER shows that the sagging occurs in an area inscribed entirely within the female mold, wherein the inner periphery may be considered the sag support. It would have been obvious to one of ordinary skill in the art that the female mold may have been brought up towards the male mold because MORIN discloses that it is known in the prior art to lift a female annular former towards the male former (col. 4 lines 50-54) because this allows for better control of the displacement speed of the glass sheets (col. 4 lines 53-54). Therefore, it would have been obvious to one of ordinary skill in the art to lift the female former of KUSTER for the reasons provided by MORIN.

Regarding claim 18, it would have been obvious to a person having ordinary skill in the art to support the glass slightly away from the edge because supporting on the direct edge would not have provided adequate support for the glass sheet during bending and increased the risk of misaligning the glass sheet to the support. A person of ordinary skill could have reached the range of instant claim 18 through optimization testing. Therefore, the claimed invention would have been obvious.

Regarding claim 19, MORIN discloses that the glass is at a temperature of approximately 550 °C when leaving the oven before bending (col. 5, lines 55-57), which is included in the range of instant claim 19. It would have been obvious that this could have been the bending temperature of KUSTER because MORIN discloses that the glass is kept close to bending temperature while traveling through the oven (col. 4 lines

Art Unit: 1791

43-45) whereas KUSTER merely requires the glass be at bending temperature without specifying any temperature ranges (col. 3 lines 31-35).

Regarding claim 22, MORIN discloses that the method results in a glass with a coefficient of non-developability of greater than 5 (col. 3, lines 10-12), which is incorporated by the range of instant claim 22. It would have been obvious that the glass of KUSTER could have a similar coefficient of non-developability because both KUSTER and MORIN teach that the processes are intended to produce glass products for automobiles (MORIN col. 1 lines 16-17, KUSTER col. 2 lines 4-7).

Regarding claim 23, see the discussion of claim 13. KUSTER discloses that the surface of the male former is air permeable (col. 4 lines 55-57).

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over KUSTER et al. (US 5,713,976) in view of MORIN (US 6,138,477) as applied to claims 13, 14, 16-19, 22, and 23 above, and further in view of HERRINGTON et al. (US 5,292,356).

KUSTER as modified by MORIN teaches a process for bending glass sheets with a prebending step wherein the glass undergoes sagging and a second bending step wherein the glass is pressed between a male and female former before being bent by a vacuum through the male former.

HERRINGTON teaches a process for shaping glass sheets wherein the heated glass sheets are placed on the female formers, pressed with a male mold, and initiating a vacuum to further shape the glass. HERRINGTON teaches connecting the male mold

Art Unit: 1791

to a negative pressure and maintaining it for a time to bend the glass sheet (col. 7 lines 24-29) and then connecting the male mold to a positive pressure to aid in releasing the glass sheet (col. 7 lines 33-36). It would have been obvious to one of ordinary skill in the art to apply a positive pressure in the vacuum male former of KUSTER because it would aid in releasing the glass sheet, as suggested by HERRINGTON.

5. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over KUSTER et al. (US 5,713,976) in view of MORIN (US 6,138,477) as applied to claims 13, 14, 16-19, 22, and 23 above, and further in view of BALDUIN et al. (US 2004/0129028 A1).

Regarding claim 20, KUSTER as modified by MORIN teaches that the bending system comprises an oven (1 in figure 1) including a system for transporting (3 in figure 1) a supported glass sheet (2 in figure 1) to a bending cell (10 in figure 1) wherein the bending cell comprises an annular female frame (3 in figure 1) and a convex male former (11 in figure 1). Regarding the vertical movement of the female former, see the discussion of claim 17. Modified KUSTER is silent to a skeleton carrying the glass to the bending cell.

BALDUIN teaches a bending system comprising an oven (para. 0039) including a system for transporting a skeleton supported glass sheet (3 in figure 1) to a bending cell wherein the bending cell comprises an annular female frame (5 in figure 1) and a convex male former (4 in figure 1). BALDUIN also discloses means for discharging the skeleton from the bending cell (see figure 2). It would have been obvious to one of

Art Unit: 1791

ordinary skill in the art to use a skeleton support to transport the glass sheets to the bending cell because BALDUIN discloses that this provides a compact forming station (para. 0026). Additionally, one of ordinary skill in the art would recognize that having a separate prebending skeleton would allow the processing of more pairs of glass sheets.

Regarding claim 21, KUSTER discloses that the area between the skirt and the male former also produces a vacuum (see figure 2).

Response to Arguments

6. Applicant's arguments with respect to claims 13-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CYNTHIA SZEWCZYK whose telephone number is (571)270-5130. The examiner can normally be reached on Monday through Thursday 7:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason L Lazorcik/
Primary Examiner, Art Unit 1791

CS